

REPORT
OF A
CASE OF ACUTE GLANDERS,
FOLLOWED BY RECOVERY;
With Remarks.

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REPORT OF A CASE OF ACUTE GLANDERS, FOLLOWED
BY RECOVERY; WITH REMARKS.

It is unnecessary, at the present day, to adduce any additional facts or arguments to prove that Glanders is a disease which is communicable from the horse to the human species. This has been completely established by the researches of many accurate observers, and is, I believe, generally admitted by the profession at large. As, however, the recorded cases of its occurrence in man are not very numerous, from the fact, probably, that it is not readily communicated to the human race, and as consequently many points relating to the pathology of the disease are obscure, it is presumed that the report of an additional case will not be unacceptable to the profession. I therefore subjoin the particulars of one which has lately been under my care, and have added some remarks, which have been suggested by a consideration of it.

CASE. William Wilcox, a horsekeeper, aged 58, was admitted into the Paddington Infirmary, late in the evening of the 19th July. He was seen by me the following day, and appeared to be very dangerously ill. His face generally was swollen and suffused, but more especially in the submaxillary region. A large quantity of saliva was pouring from his mouth, his breath was extremely fetid and sickening, his gums were swollen, and his teeth loose,—some indeed were merely hanging from the gums. The tongue was much enlarged, and could not be protruded beyond the margin of the teeth, and it was forced upwards against the roof of the mouth by the swelling of the salivary glands below; the throat was constricted, and consequently both breathing and swallowing were difficult. His nostrils were filled with a thick glutinous secretion of an offensive odour, which was with difficulty dislodged. The patient had been very restless all night, had been constantly throwing his arms about, was alternately chilly and hot, and at times sweated profusely; he had a quick pulse, and was in

a state of extreme prostration. Looking to the profuse salivation, the condition of the salivary glands, the extreme fetor of the breath, and the state of the gums and teeth, my first impression was that he had been severely salivated with mercury. It appeared, however, that he had not taken a particle of this medicine for some time, and his general symptoms were, moreover, inconsistent with this view. After a great deal of trouble, occasioned by the difficulty he had in articulating, the following history was obtained.

He had for some time past been in very destitute circumstances, in consequence of having been out of regular employment ; his food had been scanty and bad, and he had been accustomed to sleep about in stables, or wherever he could get a shelter for the night. Under these circumstances, he accepted the charge of some glandered horses at Islington. He began attending to them on the 30th of June ; and, at one time, had thirteen under his care, but some became so bad that they had to be sent to the knackers. In grooming them, the secretions from their mouths and nostrils were frequently blown upon his face, and the stench of the stable in which they were kept was very great. A week after he had been looking after them, he began to feel feverish and ill ; his stomach in particular became disordered, and his appetite bad. He was now anxious to give up his employment, but his master pressed him to stay, and he remained for several days longer. He got progressively worse, the febrile symptoms increased, and his stomach became so much disordered that he could not retain any food ; at times, he broke out into profuse cold sweats, but he had no rheumatic pains, nor had he as yet any local affection of the face, nose, or salivary glands.

On Sunday morning, July 13th, while cleaning the horses, he felt completely overpowered by the stench ; and he became so ill, that he was obliged to leave the stable abruptly. He was now seized with severe headache and giddiness, and swelling of the face. Lachrymation and profuse salivation soon followed. He says that half a pint of fluid ran from his mouth in the course of an hour ; his teeth became loose, and the gums painful and tumid. His tongue began to swell, his throat felt constricted, and his nostrils became filled with a thick yellow, fetid, glutinous secretion. He had frequent rigors, succeeded by heats and cold sweats, and he felt very low and weak. He was now obliged to give up his work, and was advised to take some gin, which, together with beer, he drank from time to time, but his stomach was so irritable that very little would stay upon it. He left Islington, and came to the Iron-gate Wharf at Paddington, in the hope of getting better, but he still continued to get worse, and on the 18th July, he applied at St. Mary's Hospital for advice. He received some medicine as an out-patient, but having no home to go to, he did

not take it. The next day he went again, and had a blister applied below the jaw, but feeling worse towards evening, he applied for and received an order for admission into the Paddington Infirmary.

When admitted, I am told, he was in a very exhausted state; he breathed with difficulty, and could scarcely swallow some wine which was given him. The fetor from his mouth was most intolerable; he was restless, passed the night without any sleep, and was observed to throw his arms continually about.

I saw him at 2 P.M. on the following day. He was then worse than when admitted, his breathing was more difficult, and the swelling of his face had increased; this was most marked, as I have said, under the lower jaw, where it formed an enormous tumour. I have already mentioned some of his symptoms, but it may not be amiss to recapitulate the following. There was a profuse discharge of saliva running from his mouth; the tongue was tumid, and its surface covered with a white, moist fur; the gums were soft and swollen, and his teeth loose. On passing my finger under the tongue, a large elastic tumour was felt on each side of the *frænum linguæ*, apparently consisting of the enlarged sublingual and submaxillary glands, and the distended ducts of the latter. I made a free incision in each of these, and a great quantity of clear glairy mucus poured out, which gave the patient much relief. I was unable to examine the throat, on account of the general swelling of the parts, but from the character of the breathing, and the difficulty of swallowing, it was evidently swollen, and the *isthmus faucium* contracted. I could not, however, see any appearance of erosion, ulceration, or pustules. The nostrils were filled with a viscid, yellow, opaque secretion, which, as I have said, was with difficulty dislodged, on account of its tenacity. The *conjunctivæ* were injected, and the eyes watered profusely. The patient complained of severe headache, which was greatest over the eyes and frontal sinuses, but at times it was felt over the greater part of the head. He was very sick, could not retain food upon his stomach, and was very restless and uneasy. He stated, that he had not slept for a week. He was alternately chilly and hot, and, at times, broke out into cold sweats. His pulse was quick and weak, and he complained of great lassitude. He had no rheumatic pains, or any perceptible eruption on the skin or mucous membrane; the blister which had been applied had risen, and had a greenish, sloughy, unhealthy appearance. His bowels had twice acted during the morning, and he had made water freely.

TREATMENT. He was directed to take immediately an emetic, consisting of half a drachm of *ipecacuanha*, and, as soon as vomiting had ceased, to take five grains of the sesquicarbonate of ammonia in water every hour, as concentrated as he could swallow it; to use frequently a gargle

of the chloride of lime, and to have wine and such nourishment as he could swallow given freely, and to take an opiate at night, consisting of twenty drops of the tincture.

July 21st. On visiting him in the afternoon, his appearance was in every respect improved; his face was less swollen, as was also the tongue and salivary glands. He spoke, breathed, and swallowed better. His tongue was reduced in size; he had slept comfortably during the night, and taken nourishment, such as beef-tea, freely. His pulse had fallen to 80; the skin was cool, and he had experienced no rigors during the day. He said that the emetic occasioned copious vomiting of green unhealthy matter, and that as soon as this had taken place, he felt relieved, and as if a load had been taken off him. He subsequently took the ammonia as directed. He was ordered to continue this, and to take five grains of blue pill at bed-time, as the tongue was still rather white.

July 22nd. Improving; the tongue was almost of its natural size, and there was very little swelling of the face or salivary glands. He spoke, breathed, and swallowed better; the breath was less fetid; the pulse was quiet; the skin cool; and the bowels open. He had slept well, and had a desire for solid food. To omit wine and beef-tea, and to have animal food, with a pint of porter daily. To continue the ammonia every four hours.

July 23rd. In every respect better. The swelling of the face and throat was less, as was also the discharge of saliva. He slept well, and enjoyed his food. To continue the ammonia every four hours.

July 24th. Better. He had slept well, and ate well; the bowels were open. The swelling of the face was now confined to the sub-maxillary region, and was very slight; he could breathe through his nose, and swallow without any difficulty. The tongue was clean, moist, and of its natural size; the gums were but very little swollen; the teeth were firmer; there was no fever or shivering; skin cool; pulse 72. To continue the ammonia every four hours.

July 25th. He was convalescing favourably.

July 28th. Up to this date he had been daily gaining ground. The ammonia was discontinued on the 25th, and since then he has been taking merely a nourishing diet, with a pint of porter daily. He now wished to be discharged, declaring that he never felt better in his life. He left the next day.

DIAGNOSIS. The first question which occurs in the consideration of this case, is whether it is such as I have represented it to be, viz., one of acute glanders or not; and although the history, its mode of development, and the assemblage of symptoms, taken collectively, lead, in

my opinion, to no other conclusion, yet, it must be admitted, there are points in which it differs from other cases of the disease which have been reported. Thus, in this, there was neither ecchymosis, gangrene, or pustules, observable upon the affected mucous membrane; neither was there any specific affection of the lymphatics or the cellular tissue, although such conditions are described as forming part of the disease when fully developed. If, then, these are to be regarded as essential to it, the genuineness of the present case may be doubted. But a perusal of those which have been published does not appear to me to lead to this inference; whilst I may remark they amount to so small a number, and their history is in some respects so imperfect, that it is impossible to draw any positive conclusion from them as to the significance of particular symptoms. "Glanders", says Dr. Robert Williams, "is a disease consisting of primary fever and of local inflammation, but the local inflammation may occur independently of the fever. When the inflammation exists *per se*, the disease is termed chronic glanders; when the two are combined, it is termed acute glanders."¹ Judged by this rule, the present case must be considered as one of acute glanders, because there was both fever and local inflammation combined. The patient had indeed suffered from febrile symptoms for a week before any local inflammation declared itself, and up to the time of his admission had frequent rigors, succeeded by heats and cold sweats, and attended with lassitude and extreme prostration.

With regard again to the supervention of ecchymosis, gangrene, etc., in the pituitary membrane, it would appear from Mr. Blane's description of the disease in the horse, that the period of their occurrence varies very much in different cases. In describing chronic glanders, he says: "An increased and diseased secretion from the membrane of one or both nostrils continually flows in small or large quantities. The discharge is seldom at first perfectly purulent, but is more glairy, thick, and not unlike the white of egg, and it sometimes continues thus for a long time; at others, it soon becomes purulent, but even then there is always a degree of viscosity and glueyness in it that sticks the nostrils together as it were from its tenacity; thus differing from other pus, and which very circumstance strongly characterises the complaint. . . The disease sometimes remains long without producing ulceration; at other times, on the contrary, an ulcerating process quickly appears."² This quotation would show, that in the horse, inflammation of the Schneiderian membrane, attended with a discharge of a peculiar nature, viz., one possessing extreme viscosity

¹ WILLIAMS, R., M.D. Elements of Medicine, vol. ii, p. 376.

² Outlines of the Veterinary Art. Third Edition; p. 458.

and glueyness, is alone considered to be characteristic of the disease, and this feature was strongly marked in the present case. The patient's nostrils were filled with an offensive secretion, so adhesive, that it was only with difficulty that it could be got rid of, and it completely closed them up, so as to prevent the passage of air. But, independently of this, it appears to me, that the history of the case is alone sufficient to establish the diagnosis. The man was in good health when he undertook the care of several glandered horses ; for a week he scarcely ever left the stable, and was with them, on an average, from five in the morning until eight in the evening. All this time he was necessarily breathing a very fetid and unhealthy atmosphere, and his face was often covered with the diseased secretions of the horses. At the end of a week, febrile symptoms manifest themselves, attended with great prostration ; he perseveres in his employment, and in another week is attacked with headache, giddiness, and those peculiar affections of the salivary glands, mouth, and pituitary membrane, which must be considered as constituting the incipient, if not the confirmed, symptoms of glanders. This history alone, as I have remarked, appears to be sufficient to establish the diagnosis, and I am supported in this view by an eminent authority. " It is impossible, perhaps", says Dr. Williams, " to enumerate every difficulty that may occur in the diagnosis, but when any doubt exists, an inquiry into the habits and employment of the party will probably solve the problem."¹

MODE OF COMMUNICATION. Another point of interest in the case is the manner in which the disease was communicated to the patient, whether by infection—*i. e.*, through the atmosphere, or by direct contact with the diseased secretions ; and in this latter case, was the surface to which they were applied abraded or entire ? It was observed by Dr. Elliotson, in his valuable paper in the sixteenth volume of the *Medico-Chirurgical Transactions*, that he presumed that an abrasion of the surface to which the poison is applied is necessary for the production of the disease, because, he says, most veterinary surgeons are satisfied by experience that the matter of glanders never excites it in the horse, even if applied to the pituitary membrane of the nostrils while the surface is entire. The result of my inquiries in the present case would tend to shew that this opinion is incorrect, while it is at variance with the results of experiments which have been performed upon the lower animals. Thus we are informed that glanders has been produced by inserting the virus under the cutis with a lancet, and by rubbing it on the greasy heel of a horse. It has also been produced by inoculating the mucous membrane of the nose of the

¹ WILLIAMS, R., M.D. Elements of Medicine, vol. ii, p. 391.

horse, or else by smearing that membrane with farcied matter. Farcied matter has also been made up into balls, and introduced into the stomach of a horse, and glanders has resulted. There can be no doubt, therefore, that the poison is absorbed both by the mucous and cutaneous tissues, and that being absorbed, it infects the blood.¹ In the present case, the patient assured me that he had no scratch or abrasion whatever of any surface upon which the morbid secretions were received; and hence the disease must have been given him either by infection, or by the application of the glanders matter to a mucous or cutaneous surface free from abrasion.

That he was favourably predisposed to take such a disease, will hereafter appear; but the manner in which the disease was communicated is important, because it tends to shew, that where a predisposition exists, it may be taken more readily than has been supposed; and that in regard to such persons the disease is as eminently contagious as others that result from morbific animal poisons. In the two first cases reported by Dr. Elliotson, in his interesting memoir, the virus was supposed to have been received through an abrasion of the cuticle; and this was also the case in the others referred to, or at least in all those in whom the mode of communication could be ascertained. This may explain a circumstance by which the present is distinguished from the majority of cases which have been related by him. I refer more particularly to the absence of specific disease of the cellular and cutaneous tissues, as well as of the lymphatic system, which would readily be accounted for if the poison were received into the system through the atmosphere, and the disease arrested before it had produced any secondary affections. Whether, however, this is the case or not, we are justified in concluding that glanders may be communicated to man more readily than has been supposed, and in the absence of those conditions which have been considered as necessary for its production. Hence too much caution cannot be practised by those who have the charge, or are exposed to the effluvia of glandered horses, whether as regards breathing the atmosphere of their stables, or avoiding contact with their diseased secretions.

PERIOD OF LATENCY. I am not aware that any facts have been collected on this point, bearing upon the disease as met with in the human subject. Dr. Robert Williams observes that the poison in general has been latent from two to eight days, but he gives no facts, nor the data upon which this statement is founded. In the present case I questioned the man particularly on this point; and it appears that constitutional symptoms, viz., sickness, rigors, and fever, com-

¹ Ibid. p. 374.

menced on the seventh day after he had been taking care of the horses; and that the swelling of the face, the affection of the salivary glands, and that of the pituitary membrane, took place on the fourteenth.

PREDISPOSING CAUSES. That this patient was predisposed to the disease, or rather that the state of his constitution was such as to render it susceptible to the operation of any disturbing causes which might surround it, would appear to be almost certain from a consideration of his previous history. For some time before he took charge of these horses, he had been in very destitute circumstances; badly fed, lodged, and clothed. His constitutional powers must therefore have been enfeebled, and his capability of resisting morbid influences consequently slight, and hence we may account for the ready manner in which he succumbed to the specific causes of the disease. So far, then, the case furnishes additional testimony to the truth of the doctrine, that debility, however induced, whether by want or illness, favours the extension of fever, of epidemic, and infectious diseases; and it supports the general observation that has been made in regard to glanders, that the parties who have generally contracted it have been of intemperate habits, or have had indifferent health at the time of their falling ill or contracting the disease. As this patient was exposed both to an infected atmosphere, and had also the diseased secretion applied to his face, it is difficult to say in which of the two modes it was communicated. The history of his attack would lead me to think, as I have observed, that it was most probably through the atmosphere; and there is no reason to doubt that, under certain circumstances, it may be so communicated. It is well known, for instance, that in horses the glanders often originates in this way; and all farmers are agreed that dirty, close, and ill ventilated stables, out of which the dung is seldom removed, and the situation low and damp, are fruitful sources of it. Whether the disease is thus communicable to man, has not been as clearly ascertained; for the most part, we should be justified in saying that it is not, because numbers often breathe an infected atmosphere without catching the disease. But this immunity cannot be regarded as universal, or as exempting those who are strongly predisposed to it, whether from ill health, intemperance, or destitution.

TREATMENT. In offering some remarks upon the treatment of the present case, I cannot introduce the subject better than by quoting the following passage from Dr. R. Williams's philosophical work *On Morbid Poisons*. "All the remedies hitherto tried in acute glanders have failed, for only one out of fifteen has recovered, and that not from any particular treatment. Blood, when taken at the commencement, has

been found buffed, and some momentary relief has been afforded, but the bleeding ought not to be repeated, as in the more advanced stages the prostration is great, and stupor quickly follows, and leech bites have become gangrenous. The coming on of typhoid symptoms has caused quina, valerian, serpentaria, ammonia, and other stimulating medicines to be exhibited, but all these experiments have failed; vomiting and purging have been likewise had recourse to, but these measures have been equally unsuccessful. In the present state of our knowledge of this disease, every experiment in treatment is warranted as the only chance of subduing a malady which has so constantly proved fatal. In the more chronic forms of the disease, the recovery of the patient has appeared rather to be owing to the excellence of his constitution, than to any powerful effect produced either by general or local treatment.”¹

In the present instance, I had no reasonable expectation of the patient recovering, nor had he, or any one who was present at the time when I first saw him; and yet in twenty-four hours he was comparatively out of danger. Now this change cannot be ascribed to any improvement in his sanitary condition consequent upon coming into hospital. For, in spite of wine and other assistance, he was worse then than when he was admitted. Hence I think that the improvement which took place must be mainly attributed to the treatment, which may be thus recapitulated in the order of sequence. 1st. An incision in each of the Whartonian ducts. 2ndly. An emetic of ipecacuanha. 3rdly. Sesquicarbonate of ammonia in water hourly, as concentrated as it could be swallowed. 4thly. An opiate at bed time, with wine and nourishment, in such quantities as the patient could be prevailed upon to take.

The incision was made in the Whartonian ducts on account of their being much distended, and from an impression that their orifices were closed from the swollen state of their parietes. It gave immediate relief to the patient, by allowing a free escape of a large quantity of pent-up saliva, and the swelling and tension of the parts were at once lessened by it. The emetic was considered to be indicated by the existence of gastric derangement throughout the progress of the case, which was manifested by a constant disposition to sickness, and the inability of the patient to retain anything upon his stomach. It was also given for the purpose of producing reaction, and rousing the constitutional powers by its operation upon the ganglionic nervous centres.

But the principal reliance was placed upon the frequent administration of the sesquicarbonate of ammonia *in a concentrated form*,

¹ Op. cit., vol. ii, p. 392.

and this remedy, and mode of exhibiting it, were suggested by the good effects which I had seen it produce when so given in the severe affections of the throat, which are met with in malignant scarlet-fever. It was originally recommended by Dr. Peart in such cases, in a work on the malignant scarlet-fever and sore throat, which he published in 1802; and its efficacy is corroborated by Mr. Wilkinson, who quotes also the testimony of Mr. Ricardo in its favour. As, however, the works in question are not very accessible to the profession, and as in the particular case under consideration, it appeared to have been most beneficial, and to have been the main cause of the patient's recovery, I shall add a few remarks upon the remedy as thus exhibited.

Ammonia is reported to have been given in glanders, but without success; and the same remark has been made with reference to its exhibition in scarlet fever: but it is not so much to the medicine, as to the method of giving it, that we are, I apprehend, to look for beneficial results. On this point, Mr. Wilkinson remarks: "It has been observed that Dr. Peart has no claim to originality in the employment of the subcarbonate of ammonia in the cure of scarlatina, Dr. Withering having used the same remedy many years before: but may there not be almost as much originality in the *manner* of exhibiting a remedy, as in the first adoption of it? Dr. Withering says, that the volatile alkali may likewise be given with advantage; but it is difficult to get a sufficient quantity of it swallowed (p. 84); and he prescribes it in the following form. \mathfrak{R} Sal. absinth. \mathfrak{z} ij, sal. vol. ammon. \mathfrak{z} ss, aq. fontan. \mathfrak{z} ij. M. Ft. solutio, to be put in a quart of white wine whey, and the whole to be taken in twenty-four hours; by which it appears to me that he knew little of the powers of subcarbonate of ammonia in this disease. His manner of exhibiting it would destroy its effects, or at least the effects upon which I should depend for its advantages in scarlatina."¹ These remarks appear to me to be equally applicable to the treatment of glanders with ammonia, as it is ordinarily given.

On the other hand, it was an essential part of Dr. Peart's treatment of the scarlatina, anginosa, and maligna, that it must be given in a state as strongly stimulating as it can be swallowed. His mode of exhibiting it is contained in the following passage, which is quoted from Dr. Willan. "He dissolves two drachms of the carbonate of ammonia in five ounces of water, and directs the patient to take two teaspoonfuls every two, three, or four hours, according to the urgency of the symptoms. If the difficulty of swallowing abate, and the patient wish for it, a little cold water may be added to each dose. Cold

¹ WILKINSON, J. H. Remarks on Cutaneous Diseases, pp. 19-20. Lond.: 1822.

water, or toast and water, may be drank at pleasure. The above remedy was given in every form and in every stage of the scarlatina. Some," he says, "were glowing with universal efflorescence; in some the extremities were swelled; in others fetid ulcers appeared; in most the throat was swelled and inflamed, often ulcerated, and respiration almost prevented; but, in the most alarming cases, a scorching fever and raging delirium rendered the patient's situation horribly distressing. Yet, in all these variations of the disease, the volatile alkali was my specific, which I administered to between two and three hundred patients *successively and successfully*." The immediate effects of the remedy are stated to be, a diminution of heat, fever, and delirium, and a disposition to sleep. Mr. Wilkinson confirms the accuracy of these remarks; and, in regard to the *modus operandi* of the medicine, when so given, says: "I will take the liberty to state, that I depend not upon its diuretic nor its diaphoretic qualities, but believe that it possesses the power of increasing the strength of the arterial action, at the same time that it diminishes its frequency; that it supports the vis vitæ, without increasing the heat or irritability of the system; and by such means counteracts the tendency in the scarlatina, anginosa and maligna, to ulceration and sloughing, and all the other evils which sometimes attend this dreadful disease."¹

Mr. Wilkinson further gives the following practical illustration of the success which attended the treatment of scarlet fever in this way. "In the year 1803," he says, "I attended several cases of the scarlatina maligna with Dr. Willan and the late Dr. Hamilton. It is well known that the disease raged most fatally during that period; and we lost four of our patients out of five in one family. Never were men more puzzled to know what remedies to adopt. All which Dr. Willan has recommended in his publication were employed. Emetics, purgatives, calomel, and antimony, many other diaphoretics, opium, wine and acids, bark, blisters, decoct. contrajervæ with oxymel of squills, application of cold water, gargles of different descriptions, fumigations, etc., all without the least good effect, all without making the least sensible impression upon the disease in any of its stages. About this time, Dr. Peart published his *Practical Information on the Malignant Scarlet Fever and Sore Throat*, in which he describes the wonderful effects of the subcarbonate of ammonia, and considers it to be endowed with a specific power over that disease. Like other practitioners, he was continually lamenting the loss of his patients by that dreadful malady, till, by his own suggestion, he employed the subcarbonate of ammonia in the manner he describes; and from that moment he did not lose

¹ Op. cit., p. 20, et seq.

one patient, out of nearly three hundred. When I read this account, I immediately inquired after the character of Dr. Peart, and finding that he was most respectable both in talent and probity, and engaged in very considerable practice, I had no reason to doubt the truth of his statement, and therefore immediately adopted his remedy; and consonant with my own principle, that an effectual remedy for one genus, will, with proper management, cure all the genera of the same order, I administered it in all the following diseases—erysipelas, rubeola, scarlatina, urticaria, roseola, and erythema, with all their varieties; and I am happy to be able to declare, that from that moment to the present, a space of seventeen years, I have not only never lost a patient in the above diseases, but have never had a case of the kind that has even appeared dangerous, or that has given me a moment's anxiety."

In addition to his own, he adduces the following testimony to the remedial powers of ammonia, when so given, from Mr. Ricardo, of Bow, a gentleman of great ability, and very extensive practice: "I have received your letter, requesting me to state the result of my experience of the effects of subcarbonate of ammonia in the treatment of measles, scarlatina, and erysipelas. As I employed this medicine at your suggestion, many years ago, I lament that I have not placed on record any *particular* cases, many such having been under my care; but perhaps it may be sufficient for your purpose, that I am able to declare that the exhibition of subcarbonate of ammonia in such cases has been attended, under my direction, with constant success. You know that I am situated in the neighbourhood of many schools, which I have the pleasure of attending; and during twelve or fourteen years, in which I have employed the subcarbonate of ammonia, I have not lost a single patient, of some hundreds whom I have attended in the above diseases."

I have quoted these passages at some length, not only because the plan of treatment they refer to was adopted in the case of glanders which I have reported, with very striking results, but because I believe that the principle comprehended in it is applicable to many other analogous diseases, in which it has hitherto not been tried; and, further, because I am anxious to do justice to those with whom the merit of originating it rests. It furnishes, moreover, a good illustration of the practical views which abound in the writings of our predecessors; and of the many useful facts and suggestions which are to be met with in what may be termed the indigenous medical literature of this country; and, although at the present day a preference is often given to doctrines which have been imported, whose chief recommendation is their novelty, it would be difficult to find, in any medical records, richer or more valuable contributions, and such as are likely to be more

permanently useful, than those which have been made by the zeal and persevering industry of our forefathers. I cannot doubt of the utility of this particular mode of treatment, in this and other diseases in which I have tried it; and I have less hesitation in recommending it to professional notice, as I do not lay any claim to the merit of introducing it. I would, however, observe, that there is much in the history of glanders which assimilates it to the more malignant forms of scarlet fever. Both, for instance, arise from a specific contagion; in both there is a similarity in the parts which are more especially implicated, viz., the throat, the respiratory mucous membrane, and the salivary glands; and in each there is a tendency to ulceration, sloughing, and destruction of the tissue of these parts. These circumstances furnish grounds for believing, *a priori*, that the medicine which would be best adapted for one disease, would be most curative of the other; and this conclusion, which is suggested by careful reflection, is confirmed by practical observation, so far at least as the issue of the present case is concerned.

It is unnecessary to dwell upon the other items of treatment; the use of opium was clearly indicated upon general grounds. The employment of gargles of the chlorides of lime and soda in ulcerative affections of the mouth and throat, has been long sanctioned by general experience; and there could be no doubt as to the necessity of administering wine freely, with such support as the patient was able to take.

Chester Place, Hyde Park Gardens, August 1851.
